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ABSTRACT

This document outlines the steps in the process of converting military training materials in physician and dental assistant education to competency-based learning modules for use in the civilian sector. Subsections discuss the activity and any problems or issues involved for 14 steps. The 14 steps are as follow: establish liaison to obtain military materials, assemble and compare military materials, obtain civilian curricula, become aquainted with materials and issues of the profession and its training, obtain/develop a list of practitioner competencies, assemble advisory board, design format for converted materials, convert/develop military materials, initiate review procedures, develop field test procedure, develop organization and utilization guidelines, and print revised modules and make available. Appendixes, amounting to over one-half of the document, include these sample materials, review questionnaire, module, answer sheets, and competency matrix. (YLB)

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Organization
and Human Resource
Development
Associates, Inc.
1208 Somerset Ave. Austin, Texas 78753
(512) 837-9371

THE PROCESS OF CONVERTING MILITARY TRAINING MATERIALS TO COMPETENCY-BASED MODULES FOR CIVILIAN USE

A DOCUMENTATION

by

Organization & Human Resource
Development Associates, Inc.
Austin, Texas
Barbara P. Mink, Ed.D., Project Director

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for
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Office of Vocational & Adult Education
7th & "D" Streets, S.W.
ROB #3 - Room 5034
Washington, D.C. 20202

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THE PROCESS OF CONVERTING MILITARY TRAINING MATERIALS TO COMPETENCY-BASED MODULES FOR CIVILIAN USE

Introduction

The firm, Organization and Human Resource Development Associates, Inc. of Austin, Texas received a contract from the U.S. Department of Education on October 1, 1978, to convert military training materials in the areas of physician assistant and dental assistant education to competency-based learning modules for use in the civilian sector. As a part of the contract, OHRD agreed to prepare this document specifying the steps of the conversion process which they successfully implemented during the period of their two-year contract. It is hoped that the conversion process presented here will aid the reader in understanding what changes the military materials have undergone, and make it possible for others to duplicate this process successfully. The subsections given below serve to outline and simplify the steps taken in conversion. After each underlined title, a discussion of the activity, any problems and issues involved, is presented.

The Conversion Process

1. Establish Liaison to Obtain Military Materials

Perhaps the most important step to be taken initially is to contact the project officer and ascertain exactly what steps are

going to be taken by the contractor to contact the various Armed Forces for the purpose of obtaining their training materials. It is important to establish a liaison through USED with the different branches of the military in order to get copies of their materials, as these will not be released to private organizations without government clearance. This step can take a number of different forms, as the materials may be available from other sources, or need to be assembled from a number of different points. It is important at this stage for the contractee to know exactly what is being done, by whom, and when so that the newest materials from all the branches of the service can be obtained with the least possible delay. It is often helpful, if possible, for the contractee to maintain their own liaison person at the military site. In this way they can check directly on the progress of locating, duplicating, and transmitting the various training materials which may include course outlines, plans of instruction, instructor lecture notes, student handouts, programmed texts, study guides, text books, transparencies, film strips, films, and/or tapes. Some sample military materials are shown in Appendix A.

2. Assemble and Compare Military Materials

The next step in the conversion process is to become acquainted with all the available military materials for the purpose of comparing those developed by the different branches of the Armed Forces. It may be helpful at this point to draw up a master list of all the areas covered by the different training materials,

designating the various branches of the military where each can be found. This list can later be expanded to include the civilian areas of training which are available. Decisions can be made at this point as to which materials are most complete and relevant and can form the core of the converted curriculum.

3. Obtain Civilian Curricula

It is extremely important to begin and continue to gather together all curricula in the area to be converted as may be available from the civilian sector. These will be invaluable for the purposes of comparison with the military materials to provide 1) a means for ascertaining the state of the art (without a lengthy survey process), 2) a way of determining how much the military material is "slanted" toward the particular audience it serves, 3) a gauge for determining how comprehensive the materials to be converted should be, and 4) a source of content for use in extending lean areas of the military materials.

4. Become Acquainted with Materials and Issues of the Profession and its Training

This is a broad activity that encompasses many separate items which are listed below. The aim of these activities is to make the contractee widely versed in the area of conversion, not just from his/her own personal experience with the content area, but from interaction with resources nationwide.

a) Conduct an ERIC search. An ERIC search can be valuable as an inexpensive way of getting acquainted with current articles, issues, and research in the area of conversion. Microfiche can

usually be obtained from a library system which, with the aide of a microfiche reader can make available any print resource in the field.

b) Obtain pertinent licensing or certification standards. These may be obtained from professional associations or by writing the different state agencies, should there be varying standards from state to state. Certification exams are usually unavailable, but there may be pertinent laws which will impose restrictions or modifications upon the converted materials.

c) Obtain widely-used textbooks in the area. These, similar to the exemplary curricula, can be used for comparison purposes with the military materials.

d) Initiate and maintain relations with professional associations and their officers. Professional associations provide an arena where the most current issues of a profession are debated and acted upon. By attending meetings of professional associations, the contractee can get a personal idea of the state of the art of the profession, find out about other curriculum projects and/or competency studies, ascertain the needs of the field in terms of training materials, make contact with persons who can become part of the Advisory Board, solicit field test sites, and gain support for use of the converted materials by making the project well-known among active professionals. Personal contact with association officers is recommended and association endorsement of the conversion project can go a long way toward helping dissemination efforts. Activity or involvement with the professional associations is also

helpful, such as submitting articles or notices about the project to the association newsletter or journal, delivering a speech at an association function or convention, or offering to take part in one of the association projects, especially one which revolves around training issues.

e) Visit exemplary programs around the country. This is an invaluable way of becoming acquainted with the various modes and emphases taken by different training programs which are already operational. These visits can be useful in securing field test sites, obtaining curriculum materials, making format modifications based on what seems to be working well in the field, and recruiting Advisory Board members.

5. Obtain/Develop a List of Practitioner Competencies

In order to convert and develop competency-based curricula, it is imperative to have a working list of competencies needed by graduates who will become practitioners in the field. If at all possible, the time and money needed for this step should be built into the contract or be awarded as a separate contract to insure the viability of the products coming out of the conversion process. Through contacts with professional associations, the contractee can be made aware of any existing competency list for use in the development of the modules. Should no list exist, the contractee, short of initiating his/her own competency study survey, can compile one from such sources as 1) exemplary civilian curricula, 2) professional association guidelines, 3) licensing or certification standards, 4) the military materials, 4) widely-used texts, and

5) practitioners in the field. The resultant list will have no "official" professional status, but can provide a means by which to gauge what a comprehensive program of study would cover.

6. Assemble an Advisory Board

Through many of the previously stated steps, contact with professionals in the field can be initiated, perhaps leading to their participation in the project as part of the Advisory Board. It is generally assumed that as part of the proposal offering process, the contractee has assembled an initial Advisory Board to aid in project start-up activity. Advisory Board members can be curriculum specialists, educators, and content area specialists, besides area professionals. One of the main roles of an Advisory Board member will be to review draft modules before they are field tested in order to check on content accuracy, relevance of material, and appropriateness for the audience it will serve. A Review Questionnaire desiged for this purpose is further described below and also appears in Appendix B.

7. Design Format for Converted Materials

A recommended and USED-approved competency-based module format for the conversion of materials consists of the components given below. A sample module can be seen in Appendix C.

a) Introduction. This section is designed to provide the rationale for inclusion of the particular content area in the training program as a whole and to give an overview of the content covered.

b) Behaviorally-stated instructional Objectives. This section

includes a complete list of what the students are expected to be able to do at the end of the module and can include affective, cognitive, and psychomotor skills. Learning is seen as the process of acquiring new behaviors. "Behavior" here means not the unobservable inner workings of the mind, but rather activities that can be observed in the form of actions and responses. Simply stated, an instructional Objective* is a statement of what the learner will do as an outcome of instruction; it is a statement of competency. A complete instructional Objective contains three elements:

--performance required of the student;

--the conditions under which the student is expected to perform;

--the criterion of acceptable performance.

An example of an instructional Objective containing the above three elements is: "Given a list of antiepileptic drugs, select the drug of choice for petit mal seizures and list a side effect for that drug."

Instructional design is concerned with how to proceed from the skills the student begins with to the desired compentency. Task analysis may be required in order to develop a sequential ordering of needed skills from simple to complex culminating in the completion of the desired Objectives. The first step in task analysis is to list all the prerequisite Objectives required to finish the module. The next step is to arrange the list in order from the least complex to the most complex.

c) Learning Activities. In this section activities and

---

*The main sections of the modules are: Introduction, Objectives, Practice Exercises, Module Test, Learning Activities, Answers, and Key Terms. These module sections are capitalized throughout this document.

and materials are developed to teach each Objective in the sequence. Presented here is the main narrative and content of the area to be covered. Because the Objectives have been clearly defined in sequence from simple to complex, each student can find out where s/he needs to begin in working toward completion of the module.

d) Practice Exercises. After the presentation of the content in the Learning Activities, the Practice Exercises provide the student with a chance to interact with the material. Devices such as short quizzes, small group activities, paper and pencil exercises, discussion, and role plays are used as Practice Exercises. Answers to the Practice Exercises are given at the end of each module in order to provide the students with immediate feedback on their level of mastery so that they can review in areas of weakness.

e) Key Terms. A listing of Key Terms for the module is presented under this heading to provide the student with an additional review opportunity.

f) Module Test. This Test can be used as both a pre- and posttest. A Test item is constructed to measure student capability for each Objective in the sequence. Should a student be already able to perform the Objectives as measured by the Module Test in a pre-test situation, the student can then proceed to another module. Or, a student may be able to perform some but not all of the Objectives. The student can then be directed to work on the Objectives not yet mastered.

Post-instruction testing is conducted to determine a student's mastery of required course Objectives. Tests of this kind are

called "criterion-referenced" evaluation. The standard of acceptable learner performance has been established at the very beginning of instruction in the behavioral Objectives. Student performance of these Objectives is then compared with this standard both before and after instruction. If the student has not attained mastery after instruction, opportunity for further involvement in Learning Activities can be provided, i.e., the student can be recycled through the materials until the Objective is mastered. Because each Test item is keyed to the Objective it evaluates, the student can be directed to the original or to alternative practice materials relevant to that Objective. In this way, the Module Test is used to ascertain an individual's performance according to an established standard -- the Objective -- which is also used as a resource for the student during the learning process. Testing is not used to categorize any student in relation to other students. Rather, in criterion-referenced testing, the Objectives themselves dictate the Test questions and the standards for assessing whether students have mastered the coursework. For a resource to learn about competency-based instructional design, refer to Implementing Personalized Instruction: A Systematic Approach, by Barbara P. Washburn (Mink) (Kendall-Hunt Publishing Co., Dubuque, Iowa, 1975).

g) Answer Sheets and opportunities for revision. A detailed description of field testing and revision procedures are given below in the section on field testing, however, here it is important to point out that one implication of a competency-based, modular

format is that revision is built in, and indeed, is expected to be continued by the instructor who utilizes the module after publication. In order to collect Practice Exercises and Test item responses, special Answer Sheets can be designed and included in the modules so that data appropriate for revision can be collected both during and after module use. A sample of the Answer Sheets appears in Appendix D. If an item of response indicates that a number of students are not mastering that skill or Objective, the instructional designer assumes that the Learning Activities and/or the Test item relating to that Objective are not effective. These are then revised or replaced. Specific data collection techniques will be described in the section below on field testing. The competency-based, modular format given above provides the opportunity for instructors and instructional designers to revise old material and develop new components as needed to meet changing institutional goals, vocational and licensing requirements, and the characteristics, needs, and interests of students.

8. Convert/Develop Military Materials

After format decisions have been made, the military materials can begin to undergo the conversion process. It is hoped that by this time, the instructional developers have secured a comprehensive competency list consisting of all the skills and areas of knowledge the practitioner will need to know. Developers are faced with the choice, at this point, of converting and developing modules to meet the competencies in every area, or of converting

only those areas covered by the military materials. Often, it is clear that the military materials are light in important civilian content areas, or that the field could use modules for training in a new, as yet uncovered area. The instructional developers may also need to eliminate any military materials which are not relevant for cilivian use.

Once the decisions have been reached regarding what materials are to be converted and what additional areas may need to be developed, a working list of modules to be completed can be assembled. In each given module area, then, the military materials can be checked for completeness, relevance, and up-to-dateness with other curricula and area texts. Points of weakness can be determined and resources secured to flush out the lean areas. A tentative Introduction or rationale for learning is then drafted, to be reviewed and revised as the module nears completion.

Behavioral learning Objectives are drafted in the form outlined which meet the standards of the competency list mentioned above, or, if this is not as yet completed, which meet the standards the developer feels are most appropriate according to his/her comparison of various materials. Any Objectives which exist in the military materials can be used as guidelines, but need rigorous examination and/or revision before they can be used in the final module.

Learning Activities can be written using any handouts, study guide, or programmed text material available from the military. In addition, instruction lecture outlines may be available from which narrative can be developed. At times, the military materials

may already contain their own complete narrative section, in which case this can be used, after review, for the bulk of the Learning Activities section. See Appendix A for sample of military materials.* Chapters in recommended texts can be assigned for reading here also. The military materials usually contain complementary films or film strips, however, securing the use of military films has proven to be a difficult if not impossible task. Other audio-visuals should be substituted if possible for reference in this section, giving a full description of how to obtain such materials for the use of the instructor. If the military materials contain transparencies, these can be used in the Learning Activities section as supplementary illustrations.

After the Learning Activities are developed, they can be broken down into appropriately short sections and interspersed with Practice Exercises. Referring to the module in Appendix C, the reader will see that a possible format is to put the relevant Objectives before each Learning Activities section, after which would follow a Practice Exercise in order to provide the student with an opportunity to interact with the material just presented. Practice Exercises are developed solely by the instructional developers and can consist of whatever activity seems appropriate for material review individually or in groups. Following the last Practice Exercise, a Key Terms list could provide the student with another opportunity for testing their mastery of the material. Answers, when needed, for Practice Exercises can appear at the end of each module.

*Issue: Most of the military materials received, however, are in the format of very sketchy instructor outlines, thus making "conversion" impossible.

The Module Test is best based on the stated Objectives on a one-to-one basis, i.e., Test item one will reflect the skills mentioned in detail in Objective one. The Module Test, then, can be written as the mirror image of the Objectives with little or no tampering except perhaps to provide for a specific case illustration. Module Test Answers can be included in the module and can be removed by the instructor if s/he so desires before giving it to the student. Answer Sheets can be developed for both the Practice Exercises and the Module Tests so that students need not write in the module booklets. Space should be provided for student comments on any confusing or ambiguous questions or material. See sample Answer Sheets in Appendix D.

9. Initiate Review Procedures

An in-house review procedure consisting of another developer reading a completed draft module is important as a means of editting, checking for completeness, clarity, appropriate format, and general readability. Many small errors can be eliminated in this way and such a process insures that no module will leave the office in less than satisfactory shape.

In addition, a formal review by Advisory Board members is valuable as a content check, as well as a check on form. Instead of merely sending modules for review alone, it is suggested that developers enclose a Review Questionnaire composed of specific format and content questions to the Advisory Board members. A sample of a Review Questionnaire appears in Appendix B. In this way, the instructional developers are assured of specific comments

rather than a general statement or vague perception on the part of a possibly harried reviewer. Modules are then revised along the lines suggested by reviewers and typed in final draft form for the field test process.

10. Develop Field Test Procedure

It is recommended that while module conversion and development is taking place, a field test procedure be designed concommitantly. It is important first, to ascertain whether the field test forms to be used will need any sort of government clearance, a procedure which can be extremely time consuming. The Answer Sheets for Practice Exercises and Module Tests which have been mentioned above and which appear in Appendix D can serve as the main data gathering instruments. From these can be collected the following:

a) Error-rate data. Responses to each Test and Practice Exercise item are collected and any item that is not correctly performed with a high degree of accuracy by the students is revised. In addition, Learning Activities for these items of poor performance are reviewed and revised if necessary.

b) Student comments/suggestions. Student comments on Practice Exercise and Module Test items are solicited on the Answer Sheets. Complaints as to ambiguity, lack of clarity, or any problem areas mentioned can be examined by the instructional developers and the source of the trouble eliminated. The Answer Sheets exist separately from the modules themselves and can be sent to the contractee for data analysis without necessitating return of the entire module.

In this way, data gathering can begin before the end of the module is reached which gives the developers a chance to start any needed revision as soon as possible.

All data gathering forms require only a student identification number and school name, thus insuring anonymity of the responses. Instructors can keep a key of student ID numbers to facilitate their record keeping, but the contractee need in no way be involved with the identification of specific individuals.

Instructor comments and evaluations on the accuracy and thoroughness of each module are collected from each institution and instructor using the materials. Any specifics mentioned are considered during the revision process.

11. Secure Field Test Sites

Through many of the aforementioned activities the contractee has been in touch with professionals in the field and in training settings. It is suggested that during these contacts, the possibility of doing field testing of the converted materials be brought up. A minimum of three sites for testing the curriculum seems appropriate, with approximately 80 students to use the converted materials although the contractor may specify exactly what the requirements will be. If a college, university, community college or proprietary school shows a positive response to being a field test site, it is important to acquaint them, verbally and in writing, with exactly what they will be obliged to do and what the contractee is prepared to do.

Field test institutions are expected to 1) arrange for the necessary number of modules, 2) use modules in normal classroom conditions, and 3) collect and mail completed answer sheets to the contractee. The contractee can agree to 1) send a clean copy of the modules to be tested, 2) send a clean copy of the structured Answer Sheets for the Module Test and the module Practice Exercises, and 3) score all Practice Exercises and Tests.

Contact with field test schools through a designated contact person is important to insure the smooth functioning of the field test process. It may be politic to also be in touch with top institution administration so that they may be apprised of the testing agreement. A visit to the site should be initiated should any problems come up which need personal attention from the contractee.

12. Initiate Field Test Process

At the end of the first year of the two year grant period it is expected that the field testing will begin. One method of initiating the process which provides for collaboration and participation on the part of the field test sites is to send them a list of all the available modules, allowing them to choose those which they feel can be best utilized in their setting. Upon return receipt of the checklist, the contractee can then mail the selected modules to the sites for duplication.

It is expected that the site will then initiate the process by using the modules in the classroom. Instructors will be advised

to collect the Answer Sheets for the Practice Exercises and mail them back to the contractee so that data processing and revision can begin at the earliest possible date. Error-rate data will be collected to determine which Test items, Practice Exercise items and Learning Activities need revision. Student comments will be noted and explored to make sure that the problems so raised are eliminated. After the module has been completed in the classroom, the instructor will be contacted by instructional developers to ascertain instructor perceptions about the materials and needed revision on any sections which have not been well received. Frequent meetings on the part of project staff will allow for coordination of the revision activity and contribute to the formation of an overall impression of the success or shortcomings of the modules.

13. Develop Organization and Utilization Guidelines

The Organization and Utilization Guidelines can take the form of a booklet for the use of instructors and administrators who will be utilizing the converted military materials in the future. As the title suggests, the content will explain the best way of using the competency-based modules and include a discussion of competency-based instruction as a means by which to improve student learning. It can be further useful here to include the assembled competency list for the profession in the form of a matrix, indicating where training materials are available for each instructional area. It is assumed the the converted military

materials will provide a source for most of the content areas, however, other areas, perhaps new to the field or more peripheral, will also be included with relevant sources. This will allow instructors and administrators to make an intelligent choice about obtaining additional materials should they be necessary for the completion of their program of study. Appendix E includes a sample of the matrix for available materials.

14. Print Revised Modules and Make Available

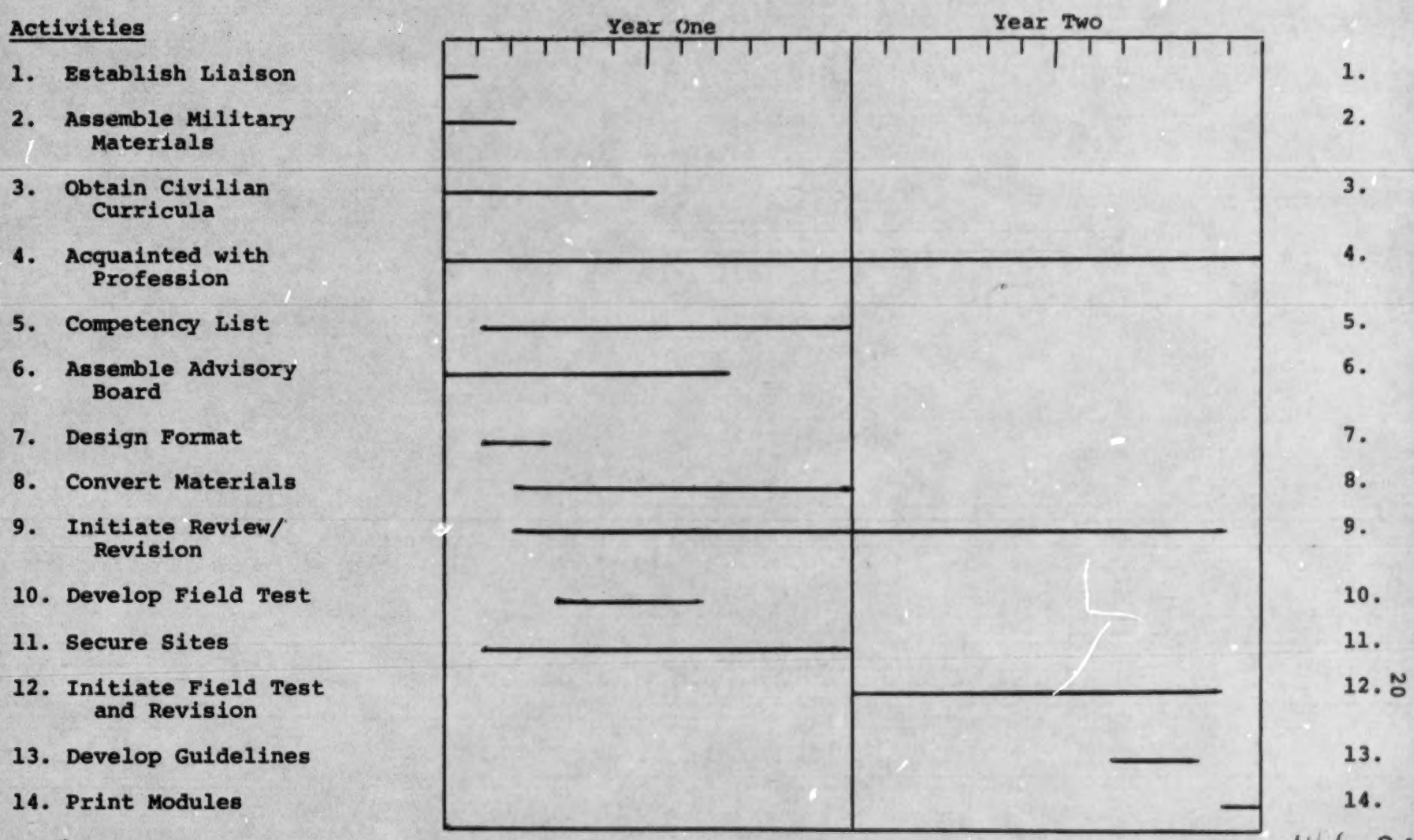
After modules are revised on the basis of the data collected in the field testing procedure, they can be final typed and printed. It is assumed that the contractor (USED) will provide specific guidelines on the method of printing and binding. Further, it is assumed that USED will undertake the bulk of the dissemination effort, as this is not stipulated to be part of the conversion contract. Various brochures, audio-visual presentations, and reports may be assigned to the contractee to facilitate the dissemination process and specific guidelines on the preparation of these documents will in all probability be made.

Summary

The outline and brief discussion given above is presented in hopes that it will facilitate other contractees in the process of converting military materials to competency-based modules for use in the civilian sector. It is not to be assumed that each activity listed is discrete and that the order given them is

inviolate. Indeed, there will exist a great degree of appropriate overlap in activities. To make the conversion process more understandable in terms of the simultaneity of activities during the project period a time line is given below which illustrates this graphically.

Time Line of Conversion Activities



Appendix A

Sample Military Materials

PLAN OF INSTRUCTION/LESSON PLAN PART I

NAME OF INSTRUCTOR	COURSE TITLE
	Physician Assistant (Phase I)

BLOCK NUMBER	BLOCK TITLE
XI	Physical Examination

1 COURSE CONTENT	2 TIME
6. Abdomen and Genitourinary System	4

a. Given information pertaining to the physical examination of the abdomen and genitourinary system, perform a routine physical examination of the abdomen and the genitourinary system. Eighty percent of the items listed on checklist 3ALR91730-XI-6a must be performed correctly. CTS: 4a, 4b, 4c, 4d, 4e Meas: W, PC

(1) Review surface anatomy of the abdomen

(2) Abdominal inspection

(3) Abdomen auscultation

(4) Percussion of the abdomen

(5) Palpation of the abdomen

(6) Rectal examination

(7) Inspection and palpation of male genitalia

(8) Female genitalia

(9) Routine examination of abdomen and GU organs

SUPERVISOR APPROVAL OF LESSON PLAN (PART II)

SIGNATURE AND DATE	SIGNATURE AND DATE
Edward J. McShane 8 Aug 78	

PLAN OF INSTRUCTION NUMBER	DATE	PAGE NO.
3ALR91730	8 FEB 1978	147

ATC FORM OCT 78 133 PREVIOUS EDITION IS OBSOLETE

PLAN OF INSTRUCTION/LESSON PLAN PART I (Continuation Sheet)

COURSE CONTENT

SUPPORT MATERIALS AND GUIDANCE

Student Instructional Materials
Textbook, A Guide to Physical Examination, First Edition; Barbara Bates
SW 3ALR91730-XI-1, Introduction to Physical Examination

Audiovisual Aids
Transparency Set, Physical Examination
Film SHCS 025, Routine Pelvic Examination

Training Equipment
Equipment Set, Physical Examination (1)
Pelvic Model (16)

Training Methods
Lecture/Discussion (2 hrs)
Performance (2 hrs)

Multiple Instructor Requirements
Supervision, Safety (6 instructors for 2 hours)

Instructional Guidance
The instructor will gain the students' attention and present an illustrated lecture to the entire class on the physical examination of the abdomen and the genitourinary system. He will summarize the lecture, discuss with the class the examination of the abdomen and genitourinary system, and introduce the next subject. The class will use a study guide/workbook and practice giving routine abdominal genitourinary examinations on each other.

PART II - TEACHING GUIDE

INTRODUCTION (Min)

ATTENTION: Common complaints of your patients will be related to the abdomen, genitalia and/or rectum. No physical examination is complete without examination of these structures.

OVERVIEW: 6a. Given information pertaining to the physical examination of the abdomen and genitourinary system, perform a routine physical examination of the abdumen and the genitourinary system.

(1) Review surface anatomy of the abdomen
(2) Abdominal inspection
(3) Abdominal auscultation
(4) Percussion of the abdomen
(5) Palpation of the abdomen
(6) Rectal examination
(7) Inspection and palpation of male genitalia
(8) Female genitalia
(9) Routine examination of abdomen and GU organs

MOTIVATION: Your evaluation of these structures will be only as accurate as your examination technique and ability to observe what you elicit. There are a number of ways in which you can make this area of examination, particularly of the genitalia and rectum, less of a traumatic experience to your patient. We will try to point these out as we proceed with the discussion. A major consideration is to protect the dignity of your patients.

TRANSITION: Let us begin with a review of the surface anatomy of the abdomen.

BODY (Min)

PRESENTATION:

6. Abdomen and genitourinary system

a. Given information pertaining to the physical examination of the abdomen and genitourinary system, perform a routine physical examination of the abdomen and the genitourinary system. 80% of the items listed on checklist 3ALR91730-XI-6a must be performed correctly.

(1) Review surface anatomy of the abdomen

(a) Review the subdivisions

(b) Mention the structure in the subdivisions

1 RUQ

2 LUQ

3 RLQ

4 LLQ

(2) Abdominal inspection

(a) The skin

(b) The contour

(c) Peristalsis

(d) Pulsations

(3) Abdominal auscultation

(a) Bowel sounds

(b) Vascular sounds

(c) Other

(4) Abdominal percussion

(a) For general orientation

(b) Specific structures

1 Liver

2 The stomach

3 The spleen

(5) Palpation of the abdomen

(a) Light palpation

(b) Deep palpation

1 Identify masses

2 Identify areas of tenderness

3 Evaluate the abdominal organs

a The liver

b The spleen

b The spleen

c The right kidney

d The left kidney

e. The aorta

(6) Rectal examination

(a) Give a brief discussion of normal anatomy

1. Male

a. Anal canal

b. Prostate

c. Rectum

(b) Examination technique

1 Some abnormalities

2 Position

a Standing

b Lying

3 Check fecal material for occult blood

(7) Inspection and palpation of the male genitalia

(a) Anatomy

1 Penis

a Shaft

b Glans

c Urethral os

2 Testis

a Size

b Consistency

c Epididymis

d Vas deferans

3 Inguinal canal

a Internal ring

b External ring

c Palpation of the penis

(b) Scrotal examination

1 Inspection

2 Palpation

a Testis

b Epididymis

c Vas deferans

(c) Hernias

1 Inspection

2 Palpation

a External ring

b Internal ring

c Femoral canal

(b) Examination

1 Penis

a Inspection

(1) Skin and foreskin

(2) Glans

(3) Urethra

(8) Female genitalia

(a) Anatomy

1 External

2 Internal

a Vagina

b Uterus

(1) Cervix

(2) Fundus

(3) Isthmus

c Ovaries

d Ligaments

e Rectum

(b) Examination of female genitalia

1 Inspect the external genitalia

2 Inspect the vagina and cervix

3 Make three smears

4 Inspect the vagina as you withdraw the spec

5 Bimanual examination

a Palpate midline area

b Palpate the lateral fornix

c Now do a bimanual with one finger in the rectum and one in the vagina

CONCLUSION (Min)

SUMMARY: 6a. Given information pertaining to the physical examination of the abdomen and genitourinary system, perform a routine physical examination of the abdomen and genitourinary system.

(1) Review the surface anatomy of the abdomen

(2) Abdominal inspection

(3) Abdomen auscultation

(4) Percussion of the abdomen

(5) Palpation of the abdomen

(6) Rectal examination

(7) Inspection and palpation of the male genitalia

(8) Female genitalia

(9) Routine examination of abdomen and GU organs

REMOTIVATION: During the last two hours we have given much information both during lecture and film presentation about the routine examination of the abdomen, the GU organs and the rectal examination. With practice you will incorporate these into your skills and make this be a significant part of your patient evaluation.

Let me stress to you that you must protect the dignity of your patients.

CLOSURE: Are there any questions?

Appendix B

Review Questionnaire

Rating Form

Module: _____

School Number: _____ Instructor Number: _____

A series of questions below ask for opinions of various aspects of this module. Please respond to each question by circling the appropriate number on the scale provided. If this module is rated as a one or two on any of the aspects covered, please explain why in the space provided after each question. Be as specific as possible. This will be of great assistance in guiding revision of the module.

1. Are the pretest items consistent with the stated objective?

1	2	3	4	5
No Consistency				Very Consistent

IF you rated this aspect of the module as a one or a two, please explain.

_____

_____

_____

2. Is the introduction concise, interesting and clear?

1	2	3	4	5
Not at all				Very much so

IF you rated this aspect of the module as a one or two, please explain.

_____

_____

_____

3. Are the objectives behaviorally stated?

1	2	3	4	5
Not at all				Very well stated

IF you rated this aspect of the module as a one or two, please explain.

_____

_____

_____

4. Is there an appropriate mix of objectives (affective, cognitive, psychomotor)?

1	2	3	4	5
Very poor mix				Very good mix

IF you rated this aspect of the module as a one or two, please explain.

_____

_____

_____

5. Is the order in which the objectives are stated appropriate?

1	2	3	4	5
Very inappropriate				Very appropriate

IF you rated this aspect of the module as a one or two, please explain.

_____

_____

_____

6. Is the level of mastery stated in the objectives appropriate (100%, 90%, 80%)?

1	2	3	4	5
Very inappropriate				Very appropriate

IF you rated this aspect of the module as a one or two, please explain.

_____

_____

_____

7. Are the criteria for judging acceptability of student pretest responses clear?

1	2	3	4	5
Not at all clear				Very clear

IF you rated this aspect of the module as a one or two, please explain.

_____

_____

_____

8. Are the learning activity steps appropriate in size?

1	2	3	4	5
Very inappropriate				Very appropriate

IF you rated this aspect of the module as a one or two, please explain.

_____

_____

_____

9. Do the practice items accurately measure learner mastery of objectives?

1	2	3	4	5
Not at all accurate				Very accurate

IF you rated this aspect of the module as a one or two, please explain.

_____

_____

_____

10. Are the types of learning activities appropriate?

1	2	3	4	5
Very inappropriate				Very appropriate

IF you rated this aspect of the module as a one or two, please explain.

_____

_____

_____

11. Is the material presented on the page in an interesting and clear manner -- liberal use of spacing, diagrams, charts, highlighting methods.

1	2	3	4	5
Not at all				Very well

IF you rated this aspect of the module as a one or two, please explain.

_____

_____

_____

12. Are the instructions to the learner clear?

1	2	3	4	5
Not at all clear				Very clear

IF you rated this aspect of the module as a one or two, please explain.

_____

_____

_____

13. Is the content of the module technically clear?

1	2	3	4	5
Not at all clear				Very clear

IF you rated this aspect of the module as a one or two, please explain.

_____

_____

_____

14. Do the module posttest items accurately measure learner mastery of the stated objectives?

1	2	3	4	5
Not at all accurate				Very accurate

IF you rated this aspect of the module as a one or two, please explain.

_____

_____

_____

15. Are the criteria for judging acceptability of student posttest responses clear?

1	2	3	4	5
Not at all clear				Very clear

IF you rated this aspect of the module as a one or two, please explain.

_____

_____

_____

For each of the following questions please be as complete as possible in you answers. <u>All</u> information you provide to us is useful in making revisions in the modules.

16. Are any supplementary learning materials appropriate for this module? If so, please list relevent learning materials.

17. Would you have approached the teaching of this content differently? If so, what changes would you have made?

18. In terms of total course content is too much or too little emphasis placed on the content of this module? If the emphasis is inappropriate, please indicate what changes you would make.

19. If material was to be added to this module what would it be?

20. If material was to be deleted from this module what would it be?

21. What do you consider the especially good aspects of this module to be?

22. Do you believe that this module would prepare a learner to pass the section of the national examination concerning this topic? If not, what changes would you make?

23. Do you believe that this module would prepare the learner to be an entry level professional regarding this topic? If no, what changes would you make?

Appendix C

Sample Module

Anti-epileptic Drugs

Introduction

There are over half a million epileptics in the U.S. who are dependent on one or more of the drugs to be discussed in this module. Without the help of these drugs, leading a normal or near-normal life would be impossible.

The anti-epileptic drugs available are quite useful and effective but they have many side effects - both minor and serious. There are many types of epilepsy and many anti-epileptic drugs available. No drug, however, is effective in all types of epilepsy. In fact, some drugs are useful in one type and aggravate another. Some agents are quite toxic and should be used only after all others fail. Many patients may have more than one type of epilepsy, or require several drugs to control one type. Your responsibility will be to control the symptoms of the type or types of epilepsy present with the smallest number of least toxic drugs.

In this module we will discuss:

- Epilepsy and the different types.
- Anti-epileptic drugs.
- Anti-epileptic therapy.

Objectives

Objective 1 Define epilepsy.

Objective 2 Define seizure.

Objective 3 List three types of seizures.

Objective 4 Describe briefly the characteristics of: psychomotor seizures, the three types of petit mal seizures, and the three types of motor seizures.

Objective 5 Name the classification of drugs used to prevent epileptic seizures.

Objective 6 Give two pissible explanations of the mode of action for the anticonvulsant drugs.

Objective 7 Name the five major anti-epileptic drug categories.

Objective 8 Name the drug of choice for each type or classification of epilepsy and state adverse effects (if any), and necessary precautions for use or withdrawal.

Objective 9 List the ten general principles of anti-epileptic therapy.

Note: The terms central nervous system depressants, anticonvulsant drugs, and anti-epileptic drugs are used interchangeably throughout this module.

Objective 1 Define epilepsy.

Objective 2 Define seizure.

Objective 3 List three types of seizures.

Objective 4 Describe briefly the characteristics of: psychomotor seizures, the three types of petit mal seizures, and the three types of motor seizures.

Learning Activities

Epilepsy is a collective term for a group of chronic convulsive disorders having in common the occurrence of usually brief episodes (seizures) associated with loss or disturbance of consciousness. Often these seizures are characterized by tonic-clonic or repetitive body movements and sometimes autonomic hyperactivity, and always correlated with abnormal and excessive EEG discharges.

Seizures are paroxysmal (episodic) events. They have a beginning and they have an end in the stream of a patient's consciousness. Seizures are brief and most last less than 90 seconds. The seizure may be followed by severe impairment of behavior that may last much longer.

There are more than a dozen distinguishable types of seizures, but for our purposes we will only be concerned with three.

1. Motor seizures. Motor seizures can be classified into three classes, the first is the grand mal.

   a) The grand mal is a major convulsion of the tonic-clonic type. It is generalized, involving the entire body.

   b) The second class is focal seizures. This seizure is localized in one part or one side of the body.

   c) The third class is a type of focal seizure called the Jacksonian. It is differentiated from a strict focal seizure by a progression of involuntary movements from one part of the body to another.

2. Petit mal. Petit mal seizures are characterized by brief attacks of loss of consciousness, usually with some symmetrical clonic motor activity varying from eyelid blinking to jerking of the entire body. Petit mal seizures can be classified as:

   a) Pure petit mal absence - no motor activity with short stare lasting from 10 to 90 seconds.

   b) Myoclonic - varying degrees of spasma.

   c) Akinetic - relaxation of muscles.

3. Psychomotor. Psychomotor seizures are characterized by pseudo-purposeful, confused behavior and/or psychic activity (automatism and aura) which is irrelevant for the time and place. The patient is often amnesic afterwards.

Practice Exercise (Objectives 1-4)

1. Define epilepsy.

2. Define seizure.

Match the following characteristics with the correct type of seizure. Use each selection only once.

3. _____ petit mal
4. _____ petit mal
5. _____ motor seizures
6. _____ motor seizures
7. _____ motor seizures
8. _____ psychomotor
9. _____ psychomotor

a. no motor activity.
b. patient is often amnesic afterward.
c. automatism and aura.
d. major convulsion of the tonic-clonic type.
e. progression of involuntary movements from one part of the body to another.
f. varying degress of spasms.
g. localized in one part or one side of the body.

Objective 5 Name the classification of drugs used to prevent epileptic seizures.

Objective 6 Give two possible explanations of the mode of action for the anticonvulsant drugs.

Learning Activities

Nearly all epileptics are dependent upon drug therapy to prevent seizures and enable them to lead more normal and useful lives. Although the ideal drug is certainly not available, present drugs to help at least 80% of epileptics. These drugs may be classified as Central Nervous System (CNS) depressants but are selective enough to prevent epileptic seizures in doses that do not cause excessive drowsiness.

The mechanism of action of the anticonvulsant (CNS) drugs is not known with certainty. Seizures are believed to be produced by discharges of abnormal foci in the brain. These discharges then spread creating long reverberating circuits. The anticonvulsant drugs may act by:

a) suppressing the abnormally discharging foci or,

b) preventing the spread of the discharges by raising the threshold for stimulation and thereby reducing the excitability of the normal neurons.

Practice Exercise (Objectives 5-6)

1. Name the classification of drugs used to prevent epileptic seizures.

2. Two possible explanations of the mode of action for the anticonvulsant drugs are:

   a.

   b.

Objective 7 Name the five major anti-epileptic drug categories.

Objective 8 Name the drug of choice for each type or classification of epilepsy and state adverse effects (if any), and necessary precautions for use or withdrawal.

Learning Activities

Anti-epileptic Drugs

1. Barbiturates and related drugs.
2. Hydantoins.
3. Oxazolidones.
4. Succinimides.
5. Miscellaneous anticonvulsants.

Barbiturates and related drugs. Phenobarbital (Luminal) is one of the oldest, safest, cheapest and most effective agents. It is used principally in the treatment of grand mal seizures and is considered by most to be the drug of choice for initial therapy. It is sometimes also used for the treatment of psychomotor seizures. It is not considered effective in petit mal seizures (unless the patient also has grand mal seizures).

The most common side effect is drowsiness. Caution should be exercised during withdrawal. A slow withdrawal is recommended to prevent rebound convulsions.

Mephobarbitol (Mebaral) is demethylated in the body to phenobarbitol, therefore it is quite similar but less potent, and more expensive.

Primidone (Mysoline) is not a true barbiturate, but is closely related. It is also converted to phenobarbital in the body. It is most useful in psychomotor seizures with some effect on grand mal seizures, but it is most often reserved for refractory cases. Large doses are required for effectiveness which cause marked sedation.

Hydantoins. Diphenylhydantoin (Dilantin) is the drug of choice among the hydantoins and is the most useful in grand mal and psychomotor seizures. It is often used in combination with phenobarbital causing a reduction in drowsiness.

There are many side effects, gingival hyperplasia and ataxia being the most common. Others are: ocular signs and symptoms (nystagmus), skin eruptions, hypocalcemia, and decreased serum folic acid levels resulting in megaloblastic anemia. Rare but serious reactions include blood dyscrasias and hepatitis.

Mephytoin (Mesantoin) is extremely toxic and used only in refractory cases. Blood dyscrasias is one of its more serious side effects.

Oxazolidones. Trimethadione (Tridione) and Paramethadione (Paradione) are similar and used most effectively in the treatment of petit mal seizures but should be reserved for refractory cases because of their toxicity. Paramethadione is less toxic but also less potent.

Common side effects are photophobia, drowsiness, ataxia, nausea and vomiting. Serious but less common side effects are hepatitis, kidney damage, blood dyscrasias, exfoliative dermatitis, erythemia multiforma.

Succinimides. Ethosuximide (Zarontin), Methsuximide (Celontin), and Phensuximide (Milontin) are used for the treatment of petit mal seizures, with Ethosuximide (Zarontin) being the drug of choice.

Common side effects are drowsiness. A rare but serious side effect is blood dyscrasias.

Miscellaneous anticonvulsants. Phenacemide (Phenarone) is principally used in refractory psychomotor seizures but also may be effective in the treatment of grand mal, petit mal, and mixed seizures. It should be used with great caution and only after other medications have failed. Its side effects are potentially fatal and include hepatitis, blood dyscrasias, renal disturbances, and toxic psychosis (suicidal tendencies).

Acetazolamide (Diamox) is occasionally used for the treatment of several types of epilepsy in combination with other drugs. Its effect may be due to a mild metabolic acidosis or inhibition of carbonic anhydrase in the brain, or premenstrual diuresis. It has a temporary effect and is seldom used.

Diazepam (Valium), when used by I.V. or I.M., may be of value in the treatment of petit mal and akinetic epilepsy.

Carbamzepine (Tegretol) has been used in Europe for several years but has only recently been approved in the U.S. as an anti-epileptic drug. It is effective in the treatment of grand mal seizures and considered very effective for psychomotor seizures. It has been suggested that the use of Carbamzepine (Tegretol) be limited to refractory psychomotor and refractory grand mal epilepsy due to its toxicity.

Common side effects are diplopia, dizziness, drowsiness, unsteadiness, nausea and vomiting. Less common but more serious side effects are liver abnormalities, blood dyscrasias, and skin disorders.

TABLE 1

TYPE OF DRUG	Grand Mal	Petit Mal	Psychomotor
Barbiturates & related drugs	X drug of choice - phenobarbital		X
Hydantoins	X		X drug of choice - diphenylhydantoin
Oxazdidones		X	
Succinomides		X drug of choice - ethosuximide	X carbamazepine
Misc. anti-convulsants	X carbonia anhydrase inhibitors	X carbonic anhydrase inhibitors & Diazepam	X carbamazepine

Practice Exercise (Objectives 7-8)

1. List five major antiepileptic drug categories

In the blanks provided by each drug, list the drug categories.

2. _____ Phenobarbitol (Luminal)
3. _____ Trimethadione (Tridione)
4. _____ Phenacemide (Phenarone)
5. _____ Primidone (Mysoline)
6. _____ Diphenylhydantion (Dilantin)
7. _____ Ethosuxmide (Zarontin)
8. _____ Diazepam (Valium)
9. _____ Carbamzepine (Tegretol)
10. _____ Mephobarbitol (Mebaral)
11. _____ Acetazolimide (Diamox)
12. _____ Mephytoin (Mesantoin)
13. _____ Phensuximide (Milontin)
14. _____ Paramethadione (Paradione)

15. Select the drug of choice for grand mal seizures and next to it list that drug's side effects:

    a. Phenobarbital
    b. Mephytoin
    c. Trimethadione
    d. Methsuximide
    e. Dephenylhydantoin

16. Select the drug of choice for psychomotor seizures and next to it list that drug's side effects:

    a. Phenobarbital
    b. Mephytoin
    c. Diazepam
    d. Diphenylhydantoin
    e. Mephobarbitol

17. Select the drug of choice for petit mal seizures and next to it list that drug's side effects:

    a. Carbamzepine
    b. Ethosuxmide
    c. Paramethadione
    d. Primidone
    e. Mephytoin

Objective 9 List the ten general principles of anti-epileptic therapy.

Learning Activities

1. Diagnose the type of epilepsy - Some drugs may be effective for one type of epilepsy and aggravate another. Many patients have mixed types and must receive several different drugs. Treat the most severe type of epilepsy first and begin therapy as early as possible. This is especially important in some types of childhood epilepsy.

2. Select proper drug - Start with a low dose of the least toxic drug that is useful for the type of epilepsy diagnosed.

3. Adjust dosage - Increase the dosage until the patient is controlled or until the toxic side effects are noted.

4. Withdraw or add drugs as symptoms and side effects dictate.

5. Generally withdraw drugs slowly to prevent rebound convulsions.

6. Termination of therapy - Drugs may be able to be withdrawn gradually after 2 - 3 symptom free years. (This is most likely in children.)

7. Avoid toxic combinations - Many of these agents are quite toxic. Use them with caution and try not to combine agents with the same toxic effects.

8. No one drug is effective in all types of epilepsy.

9. The two most widely used anti-epileptics, phenobarbital and diphenylhydantoin, cause numerous drug interactions.

10. Optimal care - Frequent routine follow-up examinations should include complete blood counts, and liver and urinary analysis when appropriate.

Practice Exercise (Objective 9)

1. List the ten (10) general principles of anti-epileptic therapy.

2. Petit mal is an epileptic condition more common in children and characterized by a three cycle per secondwave called "spike and dome" in the EEG. If a child had mixed grand mal and petit mal epilepsy, which condition would you treat first?

3. To treat grand mal in this child you would probably not start with phenacemide (phenurone), because phenacemide (select all appropriate letters):
   a. is not effective in grand mal.
   b. is effective only in temporal lobe epilepsy.
   c. has a risk of blood dyscrasias.
   d. has a risk of psychic side effects.

Anti-epileptic Drugs

Terms

Akinetic

Aura

Clonic seizure

Epilepsy

Focal

Grand mal

Myoclonic seizure

Petit mal

Psychomotor

Rebound convulsions

Seizure

Tonic seizure

Anti-epileptic Drugs

Module Test

1. Define epilepsy.
2. Define seizure.
3. List three types of seizures.
4. Describe briefly the characteristics of: psychomotor seizures, the three types of petit mal seizures, and the three types of motor seizures.
5. Name the classification of drugs used to prevent epileptic seizures.
6. Give two possible explanations of the mode of action for the anticonvulsant drugs.
7. Name the five major anti-epileptic drug categories.
8. Name the drug of choice for each type or classification of epilepsy and state adverse effects.
9. List the ten general principles of anti-epileptic therapy.

Anti-epileptic Drugs

Practice Answers

Practice Exercise (Objectives 1-4)

1. Epilepsy is a collective term for a group of chronic convulsive disorders having in common the occurrence of usually brief episodes (seizures) associated with loss or disturbance of consciousness, often with characteristic tonic-clonic or repetitive body movements and sometimes autonomic hyperactivity, and always correlated with abnormal and excessive EEG discharges.

2. Seizures are paroxysmal or episodic events. They have a beginning and they have an end in the stream of a patient's consciousness. Seizures may be followed by severe impairment of behavior that may last much longer.

3. A
4. G
5. D
6. F
7. H
8. B
9. C

Practice Exercise (Objectives 5-6)

1. Central Nervous System (CNS) depressants

2. A. suppressing the abnormally discharging foci, or
   B. preventing the spread of the discharges by raising the threshhold for stimulation and thereby reducing the excitability of the normal neurons.

Practice Exercise (Objectives 7-8)

1. A. Barbiturates and related drugs
   B. Hydantoins
   C. Oxazolidones
   D. Succinmides
   E. Miscellaneous anti-convulsants

2. Barbiturates
3. Oxazolidones
4. Miscellaneous anti-convulsants
5. Barbiturates
6. Hydantoins
7. Succinmides
8. Miscellaneous anti-convulsants
9. Miscellaneous anti-convulsants
10. Barbiturates
11. Miscellaneous anti-convulsants
12. Hydantoins
13. Succinmides
14. Oxazolidones

15. Phenobarbitol - drowsiness
16. Diphenylhydantoin - gingival hyperplasia, ataxia, ocular signs symptoms (nystagmus), skin erruptions, hypocalcemia and decreased serum folic acid levels resulting in megaloblastic anemia, blood dyscrasias and hepatitis.
17. Ethosuxmide - drowsiness, ataxia, G.I. disturbances, headache, dizziness, and blood dyscrasias.

Practice Exercise (Objective 9)

1. A. diagnose the type of epilepsy
   B. select proper drug
   C. adjust dosage
   D. withdraw or add drugs as symptoms and side effects dictate
   E. generally withdraw drugs slowly to prevent rebound convulsions
   F. termination of therapy
   G. avoid toxic combinations
   H. no one drug is effective in all types of epilepsy
   I. the two most widely used antiepileptics, phenobarbitol and dephenylhydantoin, cause numerous drug interactions.
   J. optimal care

2. Grand mal - the more severe condition should be treated first, sometimes petit mal increases in frequency during control of grand mal.

3. c and d - Phenacemide is effective in grand mal epilepsy but is too toxic for use except in very limited circumstances.

Module Test Answers

1. Epilepsy is a collective term for a group of chronic convulsive disorders having in common the occurrence of usually brief episodes (seizures) associated with loss or disturbance of consciousness, often with characteristic tonic-clonic or repetitive body movements and sometimes autonomic hyperactivity, and always correlated with abnormal and excessive EEG discharges.

2. Seizures are paroxysmal or episodic events. They have a beginning and they have an end in the stream of a patient's consciousness. Seizures may be followed by severe impairment of behavior that may last much longer.

3. Motor seizures, Petit mal, psychomotor

4. grand mal - generalized, involves the entire body
   focal seizures - localized in one part or one side of the body.
   Jacksonian - progression of involuntary movements from one part of the body to another

   pure petit mal - no motor activity with a short stare lasting from 10 to 90 sec.
   myoclonic - varying degrees of spasma
   akinetic - relaxation of muscles

   psychomotor - confused behavior and/or psychic activity (automatisms & aura) often amnesic afterwards

5. Central Nervous System (CNS) depressants

6. A. suppressing the abnormally discharging foci
   B. preventing the spread of the discharges by raising the threshhold for stimulation and thereby reducing the excitability of the normal neurons.

7. Barbiturates and related drugs
   Hydantoins
   Oxazolidones
   Succinmides
   Miscellaneous anti-convulsants

8. Phenobarbitol - drowsiness.
   Diphenylhydantoin - gingival hyperplasia, ataxia, oculas signs symptoms (nystagmus) skin erruptions, hypocalcemia and decreased serum folic acid levels resulting in megaloblastic anemia, blood dyscrasias and hepatitis.
   Ethosuxmide - drowsiness, ataxia, G.I. disturbances, headache, dizziness, and blood dyscrasias.

9. a. diagnose the type of epilepsy
   b. selecte proper drug
   c. adjust dosage
   d. withdraw or add drugs as symptoms and side effects dictate
   e. generally withdraw drugs slowly to prevent rebound convulsions
   f. termination of therapy
   g. avoid toxic combinations
   h. no one drug is effective in all types of epilepsy
   i. the two most widely used anti-epileptics, phenobarbitol and dephenylhydantoin, cause numerous drug interactions
   j. optimal care

Appendix D

Sample Answer Sheets

Institution Number: _____

Student Number: _____

Anti-epileptic Drugs

Answer Sheet - Practice Exercise

Directions: Write your answers on this sheet in the appropriate space. Key words from each of the questions are supplied to make sure you respond in the correct space.

The "Comments/Questions" column is for you to record any information you think would be useful in revising this module and/or this question. Feel free to record any comments you have about confusing or insufficient information in this module.

Objectives 1-4	Comments/Questions
1. Epilepsy	
2. Seizure	
3. ____	
4. ____	
5. ____	
6. ____	
7. ____	
8. ____	
9. ____	

Return this answer sheet to your instructor when completed.

Anti-epileptic Drugs
Answer Sheet - Practice Exercise
Page 2

Comments/Questions

Objectives 5-6

1. Classification of drugs

2. Mode of action

   a)

   b)

Objectives 7-8

1. Drug categories - major
   a)
   b)
   c)
   d)
   e)

2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____

Return this answer sheet to your instructor when completed.

15. Grand mal

16. Psychomotor

17. Petit mal

Objective 9

1. a)

   b)

   c)

   d)

   e)

   f)

   g)

   h)

   i)

   j)

2. Mixed epilepsy

3. Phenacemide

Comments/Questions

Return this answer sheet to your instructor when completed.

Institution Number: _____

Student Number: _____

Anti-epileptic Drugs

Answer Sheet - Module Test

Directions: Write your answers on this sheet in the appropriate space. Key words from each of the questions are supplied to make sure you respond in the correct space.

The "Comments/Questions" column is for you to record any information you think would be useful in revising this module and/or this question. Feel free to record any comments you have about confusing or insufficient information in this module.

1. Epilepsy

2. Seizure

3. Types

   a)

   b)

   c)

4. Characteristics

   Grand mal -

   Focal seizures -

Comments/Questions

Return this answer sheet to your instructor when completed.

Comments/Questions

Jacksonian -

Pure petit mal -

Myoclonic -

Akinetic -

Psychomotor -

5. Classification

6. Mode of action

a)

b)

7. Drug categories - Major

a)
b)
c)
d)
e)

8. Drug of choice	Adverse effects

Return this answer sheet to your instructor when completed.

8. (con't.)

Comments/Questions

9. Anti-epileptic therapy

a)

b)

c)

d)

e)

f)

g)

h)

i)

j)

Return this answer sheet to your instructor when completed.

Appendix E

Sample Section of Competency Matrix

COMPOSITE LIST OF DENTAL ASSISTING TASKS
AND KNOWLEDGE AREAS

Unit III : Dental Science

Page 1 of 9

Resource Addressing
Task or Knowledge Area

Content/Tasks	Text: Textbook for Dental Assistants	Text: The Dental Assistant	ADAA Self Study Materials	Emergency Medical Technician	Curriculum Project: CASE	Curriculum Project: University of Kentucky	Curriculum Project: ACORDE	Curriculum Project: University of Washington	Curriculum Project: Military Material Conversion		
Topic I: Dental Materials											
A. Restorative											
1. Cements			•		•	•	•	•	•		
-- zinc phosphate (Fleck's)			•		•	•		•	•		
-- zinc oxide eugenol (ZOE)			•		•	•		•			
-- polycarboxylate			•		•		•	•			
-- varnishes/liners			•		•		•	•			
-- calcium hydroxide			•		•			•	•		
2. Amalgam			•		•	•	•	•	•		
3. Resins			•		•		•	•			
4. Composites	•				•	•		•			
5. Silicates			•		•	•	•		•		
6. Gold		•	•						•		
-- gold of alloying ingredients			•								
-- solders			•								
-- heat treatment			•								
-- inlay casting		•	•						•		
7. Occlusal registration material					•			•			
B. Impression			•		•	•		•	•		
1. Rubber			•					•			
2. Silicone					•			•			
3. Polysulfide (s)					•			•			

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4. Colloids			•		•			•			
-- reversible					•			•			
-- irreversible			•		•			•			
5. Compound (stick form, wafer form)					•			•			
6. Plaster					•	•		•			
7. Preparation/manipulation of impression material			•	•				•			
8. Alginate impression material								•			
9. Metalic oxide impression material								•			
C. Gypsum (Stone) Products								•			
1. Prepare, pour stone, work model				•			•	•			
2. Trim-operate trimmer				•			•	•			
D. Resin			•				•	•	•		
1. Manipulating synthetic resins			•					•			
2. Polymerization			•				•	•			
E. Abrasives			•					•			
F. Waxes			•	•				•	•		
G. Models			•	•		•	•	•			
1. Model and die materials			•				•	•			
2. Producing diagnostic study models				•		•	•	•			
3. Trimming, finishing and polishing study models						•		•			
H. Recontouring, Finishing and Polishing								•			
I. Measurement											

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J. Operate and Maintain Equipment (Dental lab engine, Dental lathe, Dental vibrator, Chalk Variable Mix II)			•					•			
K. Other											
1. Construct a shellac base plate				•				•			
2. Fabrication of mouth protectors			•					•			
3. Investment materials						•					
4. Malleting techniques								•			
5. Manipulating plastics used in prosthetics			•								
6. Pit and fissure sealants			•	•				•			
7. Prepare temporary crowns/restorations								•			
8. Selecting tooth color								•			
Topic II: Oral Anatomy											
A. Basic Terminology	•	•	•					•	•		
B. Embryology and Histology	•	•	•				•		•		
1. Early state	•		•								
2. Embryology of teeth	•	•	•						•		
3. Tissues of the teeth	•	•	•				•		•		
4. Structure of teeth		•							•		
5. Resorption of deciduous roots			•								
C. Deciduous Dentition (Primary teeth) (Eruption, form, number)	•	•	•								
1. Maxillary and mandibular incisors	•	•	•								

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D. Permanent Dentition (Secondary teeth) (Eruption, form, number)	•	•	•						•		
1. Maxillary and mandibular 1st and 2nd premolars	•	•	•								
2. Maxillary and mandibular 1st, 2nd and 3rd molars	•	•	•								
E. Supporting Structures of the Teeth	•	•	•					•	•		
1. Gingivae			•					•	•		
2. Bone		•						•	•		
3. Cementum	•	•	•				•	•	•		
4. Periodontal ligament		•						•	•		
5. Examine dentition								•			
F. Universal numbering system			•				•	•			
G. Occlusion	•	•	•					•			
Topic III: Head and Neck Anatomy											
A. Osteology of the Skull		•						•	•		
B. Temporomandibular articulation		•							•		
C. Muscles of the Head and Neck (muscles of the oral cavity)	•								•		
D. Nerves of the Head and Neck (see nervous system)								•			
E. Blood Vessels of the Head and Neck (see circulatory system)								•	•		
F. Tongue			•					•			
G. Salivary glands/mastication	•	•							•		

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H. Physiology of Mastication, Salivation and Deglutition (Palatine vulva, Palatine tonsils, Frenum, Palate)			•				•		
Topic IV: Oral Pathology									
A. Review of Histology (see Oral Anatomy)								•	
B. Injury and Repair		•					•		
C. Inflammation	•	•					•		
D. Repair (see Dental Materials)							•		
E. Tissue Changes									
1. Atrophy		•					•		
2. Hyperplasia		•					•		
3. Hypoplasia/degeneration		•	•				•	•	
4. Metaplasia									
5. Exogenous and endogenous causes of disease (Dystrophies, Gangrene, Thrombosis, General disturbances of the blood)	•						•	•	
6. Specific pathogenic conditions	•	•	•				•	•	
F. Neoplasia (Etiology, Benign, Malignant)	•	•					•	•	
G. Inflammatory Diseases of the Oral Cavity		•				•	•	•	
1. Periodontitis		•				•	•	•	
2. Pulpitis		•					•	•	
H. Miscellaneous									
1. Anodontia		•					•		

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2. Biopsy and cytology		•									
3. Caries erosion		•						•	•		
4. Delayed eruption		•						•	•		
5. General disturbances of the blood	•							•			
6. Granulomas and cysts		•						•	•		
7. Harelip or cleft palate	•	•						•			
8. Herpes								•	•		
9. Hutchinson's teeth		•						•			
10. Lesions								•	•		
11. Mottled enamel		•						•			
12. Observation of the entire oral cavity			•					•			
13. Oral inspection			•					•			
14. Oral lesions		•						•	•		
15. Apthous somatitis								•	•		
16. Tuberculosis								•	•		
17. Measles and mumps								•	•		
Topic V: Pharmacology											
A. Drug Classifications	•	•	•					•	•		
1. Actions	•	•						•	•		
2. Nomenclature			•					•	•		
B. Sources of Drugs	•	•	•					•	•		
C. Routes of Administration	•	•	•	•				•	•		

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1. Orally	•	•	•					•	•		
2. Subcutaneously			•						•		
3. Injection (Intramusculary, intraveneously)	•	•	•					•	•		
4. Sublingually (under the tongue)		•	•								
5. Inhalation	•	•	•					•	•		
6. Topically		•	•					•	•		
7. Rectally		•	•								
E. Prescription Writing	•	•	•	•				•			
F. Anesthetics											
1. Local (reactions)											
Note: See Anesthetics Section under Operative Dentistry	•	•	•					•	•		
G. Central Nervous System (Depressants and Stimulants)	•	•	•					•	•		
1. Agents for control of anxiety		•	•					•	•		
2. Nonbarbiturate sedative/hypnotics	•		•					•	•		
3. Stimulants	•							•	•		
4. Tranquilizing drugs		•	•					•	•		
H. Hemostatics (and Astringents, Styptics and Vascoconstrictors)	•	•						•	•		
I. Chemotherapeutical agents								•	•		
J. Conditions Modifying Action of Drugs											
1. Tolerance	•	•						•	•		

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2. Age and weight	•	•						•			
3. Allergy	•	•						•			
4. Cumulative effect		•	•					•	•		
5. Pathogenic conditions		•						•			
6. Important pharmacologic actions		•						•	•		
7. Rate of excretion	•							•			
8. Synergism and antagonism	•							•			
K. Control											
1. Dental therapeutics			•					•	•		
2. Understanding pharmacology	•	•						•	•		
3. Federal control of drugs		•	•					•			
4. Responsibility and standards		•						•			
5. Council on dental therapeutics	•	•	•					•			
6. Danger of drugs	•							•	•		
L. Handling Drugs											
1. Ordering and storing	•							•			
2. Maintaining inventory of supplies				•				•			
3. Recording medication and patient reaction		•						•			
4. Dosage	•			•				•			
5. Weights and measures		•						•			
6. Proper handling of medication			•					•			
7. Distinguish trade and generic names								•	•		

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M. Analgesics		•	•					•	•		
N. Antibiotics	•	•	•					•			
O. Other											
1. Allergy control drugs			•					•	•		
2. Anticonvulsants			•					•			
3. Antibiotics								•	•		
4. Antiseptics	•	•						•	•		
5. Atrophine			•					•			
6. Dentrifices and mouth washes	•							•			
7. Diabetic drugs			•					•			
8. Emergency drugs		•						•			
9. Fluorides	•							•	•		
10. Hyperthyroid drugs			•					•			
11. Hypothyroid drugs			•					•			
12. Insufficiencies of the Mycordium			•					•			
13. Pulmonary disease drugs			•					•			